WHAT IS CLAIMED IS:

1. In a data communication network for communicating between data stations over a communications medium under control of a processor which outputs a plurality of control signals, apparatus comprising:

a receive memory means and a transmit memory means;

a receive datapath for providing at least some data received over said media to said receive memory means;

a transmit datapath for providing at least some data from said transmit memory means to said communications medium;

said receive datapath including

a deserializer configured to receive serial data and output at least a portion of said received serial data in parallel;

means for determining, in response to one of said plurality of control signals, whether said data output by said deserializer is provided to said memory means;

said transmit datapath including a serializer configured to receive parallel data and output serial data.

2. Apparatus, as claimed in claim 1, wherein each of said receive memory means and said transmit memory means is a buffer.

3. Apparatus, as claimed in claim 1, wherein said data received over said communications medium includes status data indicating at least the status of port activities.

4. Apparatus, as claimed in claim 1, wherein said data received over said communications medium includes status data including at least the status of interrupts of at least one of said data stations and wherein said receive datapath includes a demultiplexer for diverting said status data to a first location prior to receipt of serial data in said deserializer.

5. Apparatus, as claimed in claim 4, wherein said first location comprises a first register.

6. Apparatus, as claimed in claim 5, wherein said apparatus is contained in a first network data station, coupled, via said communications medium, to a plurality of other data stations and wherein said first register stores status data from all said other data stations which are connected to said first network data station.

7. Apparatus, as claimed in claim 1, wherein said transmit datapath includes means for generating at least one predetermined data pattern for transmission onto said communications medium.

8. Apparatus, as claimed in claim 7, wherein said means for generating includes means for generating a plurality of predetermined data patterns and means for selecting among said plurality of data patterns in response to one of said plurality of control signals.

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9. Apparatus, as claimed in claim 1, wherein said apparatus is contained in a first network data station, coupled, via said communications medium, to a first plurality of other data stations and also coupled, by said apparatus, via said communications medium, to a second network data station which is coupled to a second plurality of data stations and wherein:

said transmit datapath includes a first-in-first-out buffer for receiving data from said transmit buffer and holding said data before providing to said serializer.

10. Apparatus, as claimed in claim 9, wherein said first network data station is coupled to said second network data station by physical layer circuitry which multiplexes data for transmission from said first and second network data stations onto said communications medium and demultiplexes said data received over said communications medium.

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11. Apparatus, as claimed in claim 9, further comprising means for determining whether said serializer receives parallel data from said first-in-first-out buffer or from said transmit memory means, bypassing said first-in-first-out buffer.

12. Apparatus, as claimed in claim 9, wherein said first network data station includes a number of receive data paths at least equal to the number of data stations in said first plurality of data stations, and wherein operation of all of the receive datapaths in said first network data station are synchronous.

13. Apparatus, as claimed in claim 9, wherein said first-in-first-out buffer is configured to output its contents to said serializer in response to a signal transmitted by said second network data station.

~~14. In a data communication network for~~ communicating between data stations over a communications medium under control of a processor which outputs a plurality of control signals, apparatus comprising:

a receive memory device and a transmit memory device;

a receive datapath for providing at least some data received over said media to said receive memory device;

a transmit datapath for providing at least some data from said transmit memory device to said communications medium;

said receive datapath including

a deserializer configured to receive serial data and output at least a portion of said received serial data in parallel;

a latch which, in response to one of said plurality of control signals, controllably provides said data output by said deserializer to said ~~receive memory device;~~

said transmit datapath including a serializer configured to receive parallel data and output serial data.

15. In a data communications network having a first station with a plurality of ports, each port coupled to one of a first plurality of other stations, said first station providing for communication among said ports in a series of communication time periods having a nominal length, each communication time period beginning with a start delimiter signal, said ports communicating with said other stations in a series of time frames, each time frame beginning with a frame reference signal, a method for maintaining a desired temporal relationship between said series of communication time periods and said series of time frames, comprising:

inserting a shortened communication time period in said series of communication time periods when said frame reference signal occurs more than a first predetermined period after said start-delimiter signal; and

inserting a lengthened communication time period in said series of communication time periods when said frame reference signal occurs less than a second predetermined period after said start delimiter signal.

16. A method, as claimed in claim 12, wherein said series of communication time periods has an average duration of about 125 microseconds.

17. A method, as claimed in claim 12, wherein said first predetermined period is about 829.6 nanoseconds and said second predetermined time period is about 341.6 nanoseconds.

18. In a data communication network for communicating between data stations over a communications medium, said network including at least first and second network data stations, said first network data station coupled to a first plurality of said data stations and also coupled to said second network data station, said second network data

station being coupled to a second plurality of said data stations, apparatus comprising:

a receive memory device and a transmit memory device;

a receive datapath for providing at least some data received over said media to said receive memory device;

a transmit datapath for providing at least some data from said transmit memory device to said communications medium;

a first-in-first-out buffer coupled to said first network data station for receiving data from said transmit memory device and holding said data before providing to second network data station; and

wherein said first-in-first-out buffer is configured to output its contents in response to a signal transmitted by said second network data station.